

ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SPK-02270
May 1983
Revised Apr 89

TO: Architect-Engineers and District Personnel:

1. The attached revised guide specification supercedes the previous guide, DUST AND EROSION CONTROL SEEDING, SPK-2G, dated May 1983, and is for use in the preparation of project specifications.

GENERAL NOTES

Para 1
Para 2

TECHNICAL NOTES

Para A
Para B
Para I

NOTE: A-E's should read all the TECHNICAL NOTES located at the beginning of this guide specification and edit the specification accordingly.

SPK-02270

Apr 1989

GENERAL NOTES

1. This guide specification is to be used in the preparation of contract specifications in accordance with the Sacramento District Specification Manual. It will not be made a part of a contract merely by reference; pertinent portions will be copied verbatim into the contract documents.
2. Where numbers, symbols, words, phrases, clauses, or sentences in this specification are enclosed in the following manner: [], a choice or modification must be made; delete inapplicable portion(s) carefully. Where blank spaces occur in sentences, insert the appropriate data. Where entire paragraphs are not applicable, they should be deleted completely.

TECHNICAL NOTES

- A. The section number will be inserted in the specification heading and prefixed to each page number in project specifications.
- B. Paragraph 1.1: Before specifying seed mixtures, the Specification Writer should consult land management plan of the installation. In last column heading, insert acre or 1,000 square feet. Insert common name of seed with the scientific name in parenthesis. See Note J.
- C. Paragraph 1.2.1: To be effective, a minimum of 3 cu. yds. per 1,000 sq. ft. should be used and incorporated into the top 3-inches of soil.
- D. Paragraph 1.4: Add common name of fertilizer, if applicable. Example: Commercial fertilizer, shall be ammonium phosphate and shall contain a minimum of 16% nitrogen, 20% phosphorous, and 0% potash, etc. [Also see paragraph 3.6].
- E. Paragraph 1.5: Some installations may charge the Contractor for water and/or restrict usage. This paragraph may read: "Water will be furnished by the Government at a nominal cost to the Contractor. When conditions of supply warrant, the Contracting Officer may place a limitation upon the quantity delivered per hour, and may restrict the time of irrigation to hours of off-peak usage." For isolated projects, where the Contractor may be required to furnish non-government water, this paragraph should read: "Water shall be furnished by the

Contractor, and shall be free of soil, acid, alkali, salt, and other substances that would be harmful to the growth of grass. The source shall be subject to approval of the Contracting Officer prior to use.

02270-i

SPK-02270

Apr 1989

- F. Paragraph 2: For most jobs, delete the statement in parenthesis. For large quantities of materials, delete the parenthesis and retain the statement.
- G. Paragraph 3.1: When a definite outline cannot be indicated on the drawings, the areas to be seeded should be described in this paragraph. For example: "The extent of project areas to be seeded shall be all ground surfaces scarred by construction operations."
- H. Paragraph 3.4: The minimum depth of tillage should be 4". A 2" depth on cut slopes of erosion areas is suggested.
- I. Paragraph 6.1: Straw mulch [on Erosion Control Areas] should generally be applied at the rate of 2 to 4 tons per square acre after the seeding operation in areas of sandy soil or where strong winds are encountered. On sand dunes, 4 to 5 tons per acre may be necessary. Slopes more gentle than 4:1 generally do not require mulching.
- J. In accordance with Division Technical Letter 1110-4-23, King Ranch Blustem, a coarse range-type grass, shall not be used as a vegetative ground cover in any Air Force Designs.

02270-ii

SPK-02270
Apr 1989

INDEX

SECTION 02270

DUST AND EROSION CONTROL SEEDING

Paragraph	Page
1. MATERIALS	02270-1
2. INSPECTION AND TESTS	02270-1
3. SOIL PREPARATION	02270-2
4. PLANTING OF SEED	02270-3
5. COMPACTING	02270-4
6. APPLICATION OF MULCH	02270-4
7. PROTECTION	02270-4
8. ESTABLISHMENT	02270-4
9. REPAIR	02270-4
10. CONSTRUCTION QUALITY CONTROL	02270-5

SECTION 02270

DUST AND EROSION CONTROL SEEDING

1. MATERIALS:

1.1 Seed: Seed shall be labeled in accordance with U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act in effect on the date of Invitation for Bids. Seed which has become wet, moldy, or otherwise damaged in transit or in storage will not be acceptable.

Kind of Seed	Lbs. per 1000 Sq. Ft.
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Erosion
Control

[Areas scarred
by construction]

Total [pounds per thousand sq. ft]

* Material other than seed of the designated species may contain weed seed not exceeding 0.5 percent of the aggregate weight of pure live seed and other material.

1.2 Soil Conditioner:

1.2.1 Nitrogen treated fine ground bark soil conditioner (0" - 1/8") or other locally available nitrogen treated rice hulls or other locally available nitrogen treated organic materials.

1.3 Mulch: Threshed straw of oats, wheat, barley, rye, or rice shall be free of mold.

1.4 Fertilizer: Commercial fertilizer shall contain a minimum of percent nitrogen, percent phosphorus, percent potash, uniform in composition, dry and free flowing, delivered in containers labeled in accordance with applicable state regulations and bearing the warranty of the producer for the grade furnished.

1.5 Water will be furnished without cost from the nearest available Government hydrant in the vicinity of the project.

2. INSPECTION AND TESTS: [All materials proposed for use shall be subject to testing by the Government in accordance with standard methods, and the Contractor shall provide samples as specified below and as directed by the Contracting Officer.] During the course of work or upon completion of the project, a check of the quantities of materials will be made against the areas

treated and if the minimum rates of application have not been met, the Contracting Officer may require the distribution of additional quantities of these materials to make up the minimum applications specified. The Contracting Officer shall be furnished the following:

2.1 A representative one-ounce sample of the seed mixture supplied for the job, labeled as to content, purity, and germination percentage.

2.2 Duplicate copies of invoices for all materials. Invoices for fertilizer shall show the grade furnished.

3. SOIL PREPARATION:

3.1 General: The outline or extent of project areas to be seeded shall be as indicated on the drawings.

3.2 Debris Removal: Prior to tillage operations, all wire, rubbish and other material which might hinder proper grading, and subsequent maintenance shall be removed from the site and disposed of as directed.

3.3 Grading: On areas seeded for dust and erosion control the finished grades shall be maintained in a true and even condition.

3.4 Tillage: The areas shall be thoroughly tilled to a depth of at least inches on erosion areas by disking, harrowing, or other approved methods until the condition of the soil is acceptable. When conditions are such, by reason of excessive moisture or other factors, that satisfactory results are not likely to be obtained, the work will be stopped by the Contractor's Quality Control Inspector and shall be resumed only when directed.

3.5 Application of Soil Conditioner:

3.5.1 Dust and Erosion Control Areas: [Lime] [Gypsum] shall be distributed uniformly at the rate of per , and shall be incorporated into the soil to a depth of at least inches on cut slopes and inches on fill slopes. The incorporation of the may form a part of the tillage operation.

3.6 Application of Fertilizer: Fertilizer shall be distributed uniformly at the rate of pounds per on dust and erosion control areas. The fertilizer shall be incorporated into the soil to a maximum depth of one (1) inch and may be a part of the tillage operation.

3.7 Leveling: Prior to final leveling, and to insure a firm uniform

surface, the area to be seeded shall be thoroughly watered to settle soft spots. Undulations or irregularities shall then be completely removed by the use of a free moving float drag before seeding operations are begun.

3.8 Clean-Up: All wire, rubbish, stones over 1 inch in diameter and other material which might hinder proper seeding and subsequent maintenance shall be

removed from the seedbed. Paved areas over which hauling operations are conducted shall be kept clean. Soil or other dirt may be deposited on paved surfaces shall be removed promptly.

4. PLANTING OF SEED:

4.1 Time of Seeding: Seeding shall be done during the season or seasons which are normal for such work, as determined by weather conditions and accepted practice in the general locality of the project. The seeding operation shall be halted when, in the opinion of the Contractor's Quality Control Inspector, conditions of high winds, excessive moisture or other factors are not conducive to satisfactory results. Upon written request of the Contractor, and upon written approval, planting may be done during off seasons provided that:

4.1.1 The resulting stand of grass shall be at least equal to the stand that might be expected from planting during the normal season; and

4.1.2 The establishment period shall be lengthened, as required, to produce the above specified stand at no additional cost to the Government.

4.2 Method of Seeding:

4.2.1 Broadcast Seeding: Seed shall be broadcast uniformly by hand, mechanical hand seeder, combination seed spreader and cultipacker, or other approved equipment at the rate specified in the paragraph, "Materials". Where seed is broadcast by hand or mechanical hand seeder, half the seed shall be sown with the sower moving in one direction, and the remainder sown with the sower moving at right angles to the first sowing. Where mulch is not used, seed shall be covered to a depth of 1/8-inch to 1/4-inch by means of a chain harrow, cultipacker, rake, or other approved device. Broadcast seeding shall not be done during windy weather.

4.2.2 Drill seeding shall be done with approved equipment with drills set not more than 4-inches apart. The seed shall be drilled uniformly over the designated areas to a depth of 1/4-inch to 3/4-inch at the rate specified in the paragraph, "Materials".

4.2.3 At the Contractor's option, the seed and fertilizer may be mixed with a specially prepared dyed wood cellulose fiber and water to form a slurry. The slurry shall be mixed in tanks having continuous agitation so that a homogeneous mixture is discharged hydraulically through hoses on the area to be seeded. Seed and fertilizer shall be applied at the rates previously specified. The wood fiber mulch in suspension shall be applied at rates of

1,000 to 1,400 pounds per acre.

4.3 Inspection of Seeding: If inspection indicates that areas have been skipped or seeded at less than the specified rate, the Contracting Officer may require the sowing of additional seed on these areas.

5. COMPACTING: Immediately after seeding, the entire area shall be compacted by means of a cultipacker or roller weighing 60 to 90 pounds per linear foot of roller. If a combination seeder and cultipacker is used, additional compaction is not required. Compacting shall not be done where mulch has been applied in a hydraulically applied slurry.

6. APPLICATION OF MULCH:

6.1 Erosion Control Areas: Straw shall be applied to all seeded slopes :1 or steeper. Straw shall be spread uniformly at the rate of [lbs per 1,000 sq. ft.] [tons per acre] and anchored in the soil by means of suitable equipment which will secure the mulch firmly in the ground. Where machinery cannot be used, mulch shall be retained in place by a shallow covering of earth, by pressing into the soil with a spade or other approved tool, or by staked twine or wire.

7. PROTECTION: Areas susceptible to vehicular or heavy foot traffic shall be protected by erecting suitable barricades immediately after seeding is completed and/or by placing warning signs of a type approved.

8. ESTABLISHMENT:

8.1 Period: The Contractor shall be responsible for the proper care of the seeded areas [for a period of days after the completion of the seeding of the entire project].

8.2 Watering: The seedbeds shall be watered immediately after compaction and kept constantly moist during the period of the Contractor's responsibility. Water shall be applied in a fine spray so as not to gully the soil or disturb the uniform thickness of the top dressing.

9. REPAIR:

9.1 General: When any portion of the ground surface becomes gullied or otherwise damaged following seeding within the period of Contractor's responsibility, the affected portion shall be repaired to re-establish the condition and grade of the soil prior to planting and shall then be reseeded as specified for initial planting, all at no additional cost to the Government.

9.2 Re-Seeding: When it becomes evident that the expected stand of grass will not be produced on certain areas, the Contracting Officer will require that these areas be reseeded with the same seed and quantity as specified for the initial seeding. Reseeding shall be completed within days following notification and these areas shall be maintained by watering as specified above

until the acceptable grass is established.

10. CONSTRUCTION QUALITY CONTROL: Attention is directed to SECTION: CONSTRUCTION QUALITY CONTROL which requires the Contractor to perform quality control inspection, testing, and reporting.

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- REMINDER -

Located at the front of these specifications are the Contract Clauses, Special Clauses and Division I GENERAL REQUIREMENTS of the Technical Specifications, which apply to every aspect of this contract including the work in this section whether performed by Prime Contractor, subcontractor, or supplier.